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Moady et al.

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[54] **ANTIPSORIATIC COMPOSITIONS, METHOD OF MAKING, AND METHOD OF USING**

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[52] **U.S. Cl.** **514/680**; 514/765

[58] **Field of Search** 514/680, 765

[56] **References Cited**

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[57] **ABSTRACT**

A psoriasis treatment composition derived from the plant Asphodelus Microcarpus includes 3-methylanthralin, chrysophanol, aloe-emodin, aloe-emodin monoacetate, and/or derivatives thereof. The composition is prepared by extracting a liquid from the Asphodelus Microcarpus root and mixing the liquid with acetic acid. A method of treatment includes applying the composition to an affected area of skin at a frequency sufficient to effect an alleviation of symptoms, typically once per day for 14–56 days.

6 Claims, 24 Drawing Sheets

TABLE 14

Percent Inhibition per Percentage of Ingredient in Fraction for 4 Main Active Ingredients in the Treatment Solution of Example 2 (Calculated From Mean % Inhibition from Table 13)

Fraction Description From FIG. 1	Fraction Ref. No. from FIG. 1	3-methyl anthralin	chrysarobi	aloe-emodin	aloe-emodin monoacetate
XAD-2 Resin DCM Eluate	23	10.58%	5.27%	443%	28%
XAD-2 Resin MeOH Eluate-DCM-Insol.	26	1.79%	3.91%	0%	0%
Hydrolyzed Z-92 XAD Resin-MeOH Eluate DCM Insol.	29	16.66%	1.48%	0%	0%
Z-92 Carboxylic Acid Fx	28	72.72%	30.76%	0%	0%
Precipitate From Neutral/ Phenol Fx	36	3.19%	1.15%	0%	0%
Neutral/ Pherol Silica Get MeOH Eluate	31	11.67%	5.26%	7.85%	22.38%
Neutral/ Phenol Silica Gel DCM Eluate	31	18.18%	6.13%	0%	14.74%
Crude Z-92	10	6.54%	7.42%	256.6%	92.77%

Example 8

Neutralization Study

As the pH of the treatment solution of Example 2 is very acidic, studies were undertaken to neutralize the pH to 7.0 in order to examine inhibitory properties in the neutral state. Crude treatment solution was adjusted to pH 7.0 with 1.0 N NaOH. Keratinocytes were assayed for growth in the presence of the neutralized extract using bioassay methodology as described above, except that neutralized treatment solution was added as the test compound at a dilution of 1:5000.

Results of this analysis indicated that neutralization removes activity of the treatment solution. While not wishing to be limited by theory, it is hypothesized that the addition of acetic acid during the preparation sequence for the treatment solution may acetylate reactive molecules, conferring additional biological activity. This may confer increased abilities to enter cells, etc. Neutralization of such entities by raising the pH to 7.0 may render the active moieties inactive, as reflected by the dramatically decreased activity observed with these studies.

Example 9

Protein Study

This Example examines whether or not any proteins were present in the treatment solution of Example 2. Toward this end, treatment solution was denatured at 65° C. in the presence of sodium dodecyl sulfate (SDS) and electrophoresed on 12% polyacrylamide gels (PAGE) in the presence of SDS.

Following electrophoretic analysis and staining with Coomassie blue, no proteins were evident on visual inspection of the gel.

While the illustrative embodiments of the invention have been described with particularity, it will be understood that various other modifications will be apparent to and can be readily made by those skilled in the art without departing from the spirit and scope of the invention. Accordingly, it is not intended that the scope of the claims appended hereto be limited to the examples and descriptions set forth herein but rather that the claims be construed as encompassing all the features of patentable novelty that reside in the present invention, including all features that would be treated as equivalents thereof by those skilled in the art to which this invention pertains.

What is claimed is:

1. A composition for the treatment of psoriasis produced by the step comprising mixing together effective amounts of 3-methylanthralin, chrysophanol, aloe-emodin and aloe-emodin monoacetate.

2. The composition recited in claim **1**, further comprising a derivative of at least one of the compounds 3-methylanthralin, chrysophanol, aloe-emodin, and aloe-emodin monoacetate.

3. A method for treating psoriasis comprising the steps of:

mixing together 3-methylanthralin, chrysophanol, aloe-emodin, and aloe-emodin monoacetate; and

applying the mixture to an area of skin affected by psoriasis with sufficient frequency to effect an alleviation of psoriatic symptoms.

4. The method recited in claim **3**, wherein the mixing step further comprises the step of adding to the mixture a derivative of at least one of the compounds 3-methylanthralin, chrysophanol, aloe-emodin, and aloe-emodin monoacetate.

5. A method for making an antipsoriatic composition comprising the step of mixing together 3-methylanthralin, chrysophanol, aloe-emodin, and aloe-emodin monoacetate.

6. The method recited in claim **5**, further comprising the step of adding to the mixture a derivative of at least one of the compounds 3-methylanthralin, chrysophanol, aloe-emodin, and aloe-emodin monoacetate.

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